

PATENT COOPERATION TREATY
PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
 (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P28730/WO KF	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/012146	International filing date (<i>day/month/year</i>) 27.10.2004	Priority date (<i>day/month/year</i>) 12.11.2003
International Patent Classification (IPC) or national classification and IPC H01P5/18		
Applicant ROHDE & SCHWARZ GMBH & CO. KG		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: <ul style="list-style-type: none"> a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows: <ul style="list-style-type: none"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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International application No.
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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages 1–6 as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____

the claims:
 nos. 1–8 as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* _____ received by this Authority on _____
 nos.* _____ received by this Authority on _____

the drawings:
 sheets 1/3–3/3 as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1–8	YES
	Claims	_____	NO
Inventive step (IS)	Claims	1–8	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	1–8	YES
	Claims	_____	NO

2. Citations and explanations (Rule 70.7)

1. This report makes reference to the following document:

D1: US-A-5 148 132 (CHAPELL ET AL), 15 September 1992
(1992-09-15)

2. Document D1 is considered to constitute the prior art closest to the subject matter of claim 1 and discloses (the references in parentheses are to that document):

a directional coupler having a first lead (figure 4, (124)) for feeding in and out a wave, and a first decoupling lead (figure 4, (122)) for decoupling a coupled wave, both leads being connected by a first network (figure 4, (119, 118)) to the first connection surface (figure 4, (120)) of the inner conductor and outer conductor of a coaxial cable (figure 4), and a second lead (figure 4) for feeding in and out the wave fed in or out by the first lead, and a second decoupling lead for decoupling a coupled wave, these two leads being connected to the second

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connection surface of the inner conductor and outer conductor of the coaxial cable by a second network (figure 4).

The subject matter of claim 1 therefore differs from the known directional coupler described in D1 in that

- the coaxial cable is bent, and its first and second connection surfaces are substantially parallel to a planar printed-circuit board which contains the first lead, the second lead, the first decoupling lead and/or the second decoupling lead.

The subject matter of claim 1 is thus novel (PCT Article 33(2)).

The present invention can therefore be considered to address the problem of providing a directional coupler with coaxial cable technology in which the mechanical and also electric connection between the coaxial cable and the leads of the directional coupler is implemented with minimal additional equipment outlay.

The solution to this problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)) for the following reasons:

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No prior art document is known which solves this problem in the same manner, or which prompts a person skilled in the art to arrive at the proposed solution by combining different documents.

Claims 2-8 are dependent on claim 1 and thus also meet the PCT novelty and inventive step requirements.